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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/679,492

10/07/2003

Akira Hikimura

243725US2

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11/14/2006

EXAMINER

RIVERO, MINERVA

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1940 DUKE STREET

ALEXANDRIA, VA 22314

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/679,492

Applicant(s)

HIKIMURA ET AL.

Examiner

Minerva Rivero

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. In the Remarks filed 8/21/06, Applicants submitted arguments for allowability of pending claims.

Response to Arguments

2. Applicant's arguments filed 8/21/06 have been fully considered but they are not persuasive.

Regarding claim 1, Applicants argue that none of Hogan's disclosed signals have 'a frame having a predetermined length that is sequentially structured by the sequentially extracted synchronization signal', nor measuring of a phase difference, which is a displacement of frames between the second reproduction synchronization signal and the retained phase signal, which in turn is based on the frame contained in the reliability synchronization signal, which in turn is based on the first reproduction synchronization signal. The examiner cannot concur with Applicants Hogan discloses 'the readback signal includes a first component caused by the *modulation* of the laser', thus the signal frames being sequentially adjusted by the laser modulation (see Col. 2, Lines 5-6). Hogan further discloses 'a clock that causes the laser driver to modulate the diode laser at an RF frequency....primarily to address a laser noise issue', thus adapting an RF frequency and therefore a length of a sequential laser signal frame and

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a readback signal in response to factors such as noise (See Col. 4, Lines 9-17).

Moreover Hogan discloses reducing phase discontinuity between previously written and new data by appropriately adjusting the phase of a write clock according to a phase difference between the first and second components of a readback signal (see Col. 1, Line 66 – Col. 2, Line 12), and adjusting the write clock (*performing clock recovery*) by using a wobble signal obtained from the medium and a high frequency component in the readback signal (also obtained from the wobble signal), the high frequency component in the readback signal being derived through a modulation clock (thus detecting only frames of a particular length) (see Col. 4, Line 44 – Col. 5, Line 5).

Therefore the claims stay rejected.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims ~~1, 8 and 15~~ ¹⁻²⁰ are rejected under 35 U.S.C. 102(b) as being anticipated by Hogan (US 6,101,158).

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5. Regarding claims 1, 8 and 15, Hogan discloses a disc recording and reproducing device, comprising (Col. 2, Lines 54-59);

a resuming section which resumes, after writing of record data on a disc is interrupted, writing of the record data, which is continuous to the record data of which writing is interrupted, at an additional data region just after an end of a recorded data region that is a region of the record data already recorded on the disc (*write-append mode*, Col. 3, Lines 22-23; *demodulating recovered data*, Col. 3, Lines 58-63);

a first reproduction synchronization signal output section which reproduces the record data recorded on the recorded data region, sequentially extracts a synchronization signal from the reproduced record data, and outputs a first reproduction synchronization signal with a frame having a predetermined length that is sequentially structured by the sequentially extracted synchronization signal (*readback signal*, Col. 3, Lines 54-56; *deriving a wobble clock signal from the readback signal*, Col. 4, Lines 54-58; *modulation clock*, Col. 4, Line 66 – Col. 5, Line 5; *deriving a data clock*, Col. 5, Lines 27-29; *detecting phase differences between a first and a second input*, Col. 6, Lines 58-67);

a reliability judging section which only detects a frame having a period that is in accordance with a predetermined standard from the first reproduction synchronization signal, and outputs the frame as a reliability synchronization signal (*bandpass filter of wobble detection circuit is centered about the frequency of the high frequency wobble*, Col. 6, Lines 32-34; *deriving a wobble clock signal from the readback signal*, Col. 4, Lines 54-58);

a synchronization signal phase retaining section which outputs, based on the frame contained in the reliability synchronization signal, a retained phase signal that retains a phase of the frame of the reliability synchronization signal (*generating a control signal that adjusts the phase of the modulation signal according to the phase difference*, Col. 5, Lines 6-9);

a second reproduction synchronization signal output section which reproduces the record data recorded on the additional data region, sequentially extracts the synchronization signal from the reproduced record data, and outputs a second reproduction synchronization signal with a frame having a predetermined length that is sequentially structured by the sequentially extracted synchronization signal (*detecting phase differences between a first and a second input*, Col. 6, Lines 58-67; *modulation clock*, Col. 4, Line 66 – Col. 5, Line 5); and

a phase difference measuring section which measures a displacement of frames between the second reproduction synchronization signal and the retained phase signal, as a phase difference (*determining a phase-difference between the wobble clock and the modulation clock*, Col. 5, Lines 6-9; Col. 7, Lines 3-14).

6. Regarding claims 2, 9 and 16, Hogan discloses the reliability judging section outputs the reliability synchronization signal when the frame having the period that is in accordance with the predetermined standard is detected from the first reproduction synchronization signal for a predetermined number of times (*bandpass filters for the various signals*, Col. 6, Lines 31-40; *identifying cycles of the modulation clock, deleting*

(e.g.) every 64th pulse, fiduciary index mark at preselected times to determining if it coincides with an edge of the data or wobble clocks and adjusting phase of the modulation signal, Col. 7, Lines 16-31).

7. Regarding claims 3 and 10 and discloses the phase difference measuring section measures the displacement of the frames between the second reproduction synchronization signal and the retained phase signal as the phase difference, when the frame having the period that is in accordance with the predetermined standard is detected from the second reproduction synchronization signal for a predetermined number of times *(bandpass filters for the various signals, Col. 6, Lines 31-40; identifying cycles of the modulation clock, deleting (e.g.) every 64th pulse, fiduciary index mark at preselected times to determining if it coincides with an edge of the data or wobble clocks and adjusting phase of the modulation signal, Col. 7, Lines 16-31).*

8. Regarding claims 4, 11 and 17, Hogan discloses the phase difference measuring section outputs the measured phase difference between the second reproduction synchronization signal and the retained phase signal as a correction value *(phase of modulation signal is adjusted according to generated control signal, Col. 5, lines 9-10);* and

the disc recording and reproducing device further comprises a recording control section which adjusts a timing to write the record data on the additional data region

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based on the correction value (*adjusting the phase of the write clocks*, Col. 5, Lines 9-12; *phase difference may be used for (writing) timing delays*, Col. 5, Lines 16-21).

9. Regarding claims 5, 12 and 18, Hogan discloses a phase difference measurement period measuring section which measures a period from a start of the reproduction of the additional data region until the phase difference is measured, as a measurement period, wherein the recording control section judges whether or not to adjust the timing to write the record data on the additional data region based on the measurement period (*identifying modulation clock cycles and suspending a write operation, and adjusting phase of the modulation signal*, Col. 7, Lines 16-32).

10. Regarding claims 6, 13 and 19, Hogan discloses the measurement of the phase difference is interrupted and the recording control section does not adjust the timing to write the record data, when the phase difference is still not measured after a predetermined period or longer is passed from the start of the reproduction of the additional data region (*phase discontinuity is longer than half of an RF clock period and write operation is suspended and phase of modulation signal is consequentially adjusted*, Col. 7, Lines 15-32).

11. Regarding claims 7, 14 and 20, disclose a reproduction abnormality detecting section which detects whether or not an abnormality exists in a reproduction state of the reproduced synchronization signal (*deriving high frequency information from recorded*

data when the wobble information is not available, Col. 5, Lines 22-27), wherein the recording control section does not adjust the timing to write the record data on the additional data region when the abnormality is detected in the reproduction state of the synchronization signal while measuring the phase difference (a data detection circuit derives a data clock to substitute for unavailable wobble information to determine a phase difference, Col. 5, Lines 27-36).

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minerva Rivero whose telephone number is (571) 272-7626. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MR 11/8/06


WAYNE YOUNG
SUPERVISORY PATENT EXAMINER